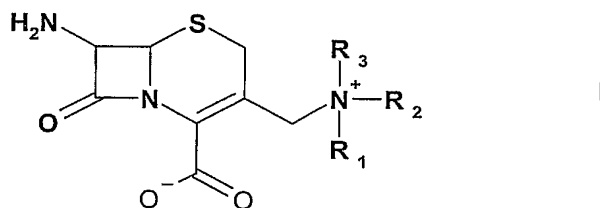


What we claim is

1. Process for the production of a compound of formula

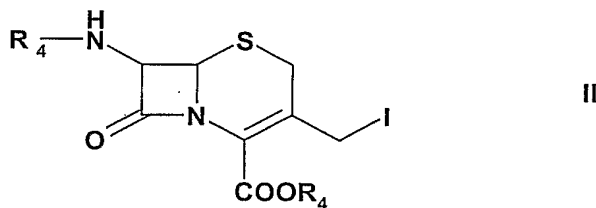


wherein R_1 , R_2 and R_3 , independently of one another, are alkyl, alkenyl, aryl, hydroxy(C_{1-6})alkyl, carbamoyl-(C_{1-6})alkyl, amino-(C_{1-6})alkyl, acylamino-(C_{1-6})alkyl or carboxy-(C_{1-6})alkyl, or wherein

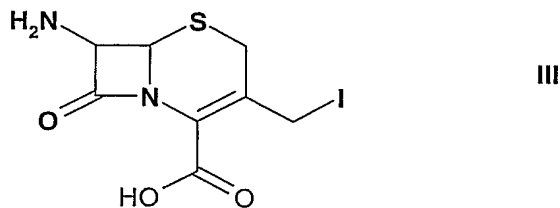
R_2 and R_3 together with the adjacent nitrogen atom, form an alicyclic 5- to 8-membered heterocyclic ring, which, in addition to the nitrogen atom, may also contain a further 1 or 2 hetero atoms selected from the group consisting of oxygen and sulphur, and R_1 signifies alkyl, alkenyl or aryl, as well as for the production of acid addition salts and/or hydrates of a compound of formula I,

comprising the reaction steps

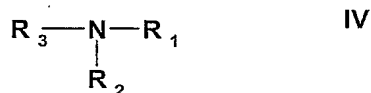
- a) desilylation of a compound of formula



wherein R_4 is a silyl-protecting group, by adding a protic solvent, in order to obtain a compound of formula

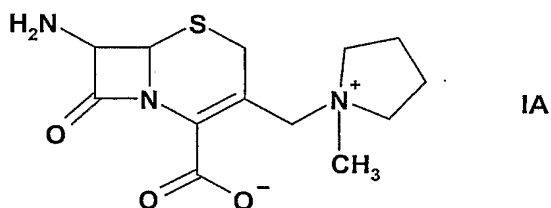


b) reaction of the compound of formula III obtained in step a) with an organic base of formula



wherein R₁, R₂ and R₃ have the significances indicated above, in order to obtain a compound of formula I.

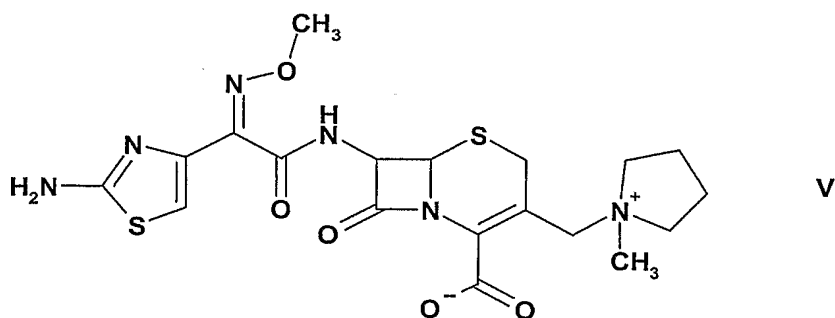
2. Process according to claim 1, whereby steps a) and b) are carried out simultaneously in one reaction container.
3. Process according to one of claims 1 or 2, whereby R₁, R₂ and R₃, independently of one another, are alkyl, alkenyl, aryl or hydroxy(C₁₋₆)alkyl.
4. Process according to one of claims 1 or 2, whereby R₂ and R₃ together represent a C₄-alkylene group, and with the adjacent nitrogen atom, form a saturated 5-membered heterocycle, and R₁ represents a methyl group, so that a compound of formula



is obtained.

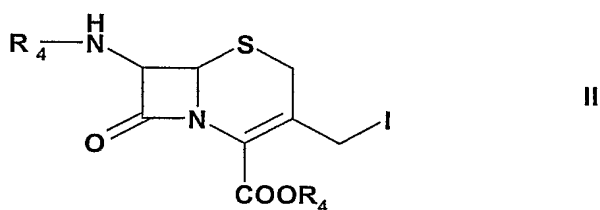
5. Process according to one of claims 1 to 4, wherein the protic solvent is a (C₁₋₄)-alcohol or a mixture of several (C₁₋₄)-alcohols.
6. Process according to claim 5, wherein the alcohol is methanol, ethanol, isopropanol, n-propanol, 2-methyl-propan-2-ol, glycol, glycerol, a propanediol or a butanediol.
7. Process according to claim 4, whereby the alcohol is isopropanol or 1,2-butanediol.

8. Process according to one of the preceding claims, whereby a compound of formula I obtained from step b) is obtained in the form of an acid addition salt and/or hydrate or is converted into the same.
9. Process according to claim 8, whereby the acid addition salt is a hydriodide or a hydrochloride.
10. Process according to one of claims 8 to 9, whereby the hydrate is a monohydrate.
11. Process for the production of cefepime of formula

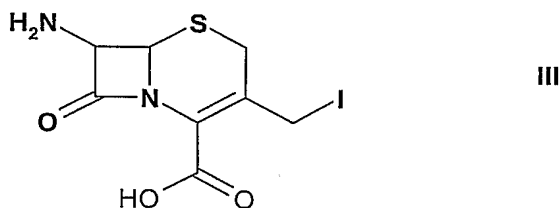


or one of its acid addition salts and/or its hydrates
comprising the reaction steps

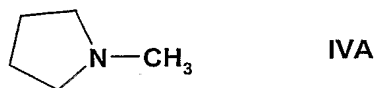
a) desilylation of a compound of formula



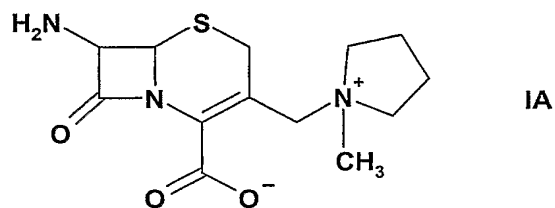
wherein R₄ is a silyl-protecting group, by adding a protic solvent, in order to obtain a compound of formula



b) reaction of the compound of formula III obtained in step a) with a strong organic base of formula



in order to obtain a compound of formula



- c) optional conversion of a compound of formula IA, as obtained from step b), into the form of an acid addition salt and/or a hydrate, and
- d) acylation of the 7-amino group of a compound of formula IA obtained from step b) or of its acid addition salt and/or hydrate obtained from step c), in order to obtain cefepime of formula V.